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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,104	11/17/2003	Yoshiaki Hamano	117786	9762

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EXAMINER

ALEJANDRO, RAYMOND

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 10/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/713,104	HAMANO ET AL.	
	Examiner	Art Unit	
	Raymond Alejandro	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 5-9, 11-13, 17 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 10 and 14-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>11/17/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I and Species I in the reply filed on 09/11/06 is acknowledged. The traversal is on the ground(s) that *“the subject matter of all claims and species is sufficiently related that a through search for the subject matter of any one Group of claims and species would encompass a search for the subject matter of the remaining claims and species. Thus, it is respectfully submitted that the search and examination of the entire application could be made without serious burden”*. This is not found persuasive because the restriction requirement dated 08/09/06 set out two separate and distinct inventions identified as **Group I** (claims 1-6 and 10-18) directed to a positive electrode material powder and lithium secondary batteries classified in class 429/231.95 and **Group II** (claims 7-9) directed to methods for producing a positive electrode material classified in class 29/623.1.

In establishing the burden, the examiner relies first on the definition of distinct or independent inventions by virtue of the relationship between *Group I and Group II*, which were identified to be related as process of making and product made; and second by the guidelines established in *MPEP 808.02 [R-3] Establishing Burden* setting forth that serious burden is present if at least one of following criteria is met: **A)** each invention has attained recognition in the art as a separate subject for inventive effort, and also a separate field of search (*Separate classification thereof*); and/or **B)** it is necessary to search for one of the inventions in a manner that is not likely to result in finding art pertinent to the other invention(s) (e.g., searching different classes /subclasses or electronic resources, or employing different search queries, a different field of search is shown, even though the two are classified together (*A different field*

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of search); and/or C) each invention can be shown to have formed a separate subject for inventive effort when the examiner can show a recognition of separate inventive effort by inventors, this can be established by at least showing a separate field of search (*A separate status in the art when they are classifiable together*). In the instant case, Groups I and II meet at least above criteria A) and B) for the reasons expressed supra, i.e. different statutory inventions as well as different classifications. Thus, serious burden would be raised if search of both different statutory inventions was made as required for the separate and distinct inventions.

2. With respect to the requirement of election of species, it is noted that as admitted by the applicant and disclosed in the specification, the present application contains more than one embodiment represented by the identification of species as delineated in the restriction requirement of 06/04/04. Therefore, the disclosure encompasses different and separated embodiments which are mutually exclusive. Applicant's attention is particularly directed to MPEP 809.02(a) which indicates how to identify species by illustrative figures, examples, mechanical means, particular materials, or other distinguishing characteristics and not by search classifications as applicants have argued. Accordingly, serious burden would be raised if the search of such different species was made as required for the separate, distinct and mutually exclusive species.

The requirement is still deemed proper and is therefore made **FINAL**.

Priority

3. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted on 11/17/03 was considered by the examiner.

Specification

5. The preliminary amendment filed 11/17/03 does not introduce new matter into the disclosure.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-4, 10 and 14-16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over the European publication EP 0849817 (heretofore 'the EP'817').

The above claims are directed to positive electrode material powder for a lithium secondary battery wherein the disclosed inventive concept includes the inclusion of an amorphous phase of oxide.

On the matter of claim 1:

The EP'817 makes known a positive active material for lithium battery including a Li-containing amorphous nickel oxide represented by a chemical composition formula of Li_xNiO_2 and which may further contain cobalt from 2-60 mol% (ABSTRACT/Page 2, Line 44-50) so as to have a chemical composition formula $\text{Li}_x\text{Ni}_{1-y}\text{M}_y\text{O}_2$ (Page 2, lines 45-50), or $\text{Li}_x\text{Ni}_{1-y}\text{Co}_y\text{M}_z\text{O}_2$ wherein M is at least one selected from the group consisting of Co, Al or P (Page 3, lines 5-10 and lines 50-58). **EXAMPLES 1-2** illustrate the powdery form of the resulting material.

On the matter of claims 2-4:

Since the EP'817 discloses the formation of a Li-containing amorphous nickel oxide, it is noted that the specific particle dispersion and/or phase formation the surface of the particle is inherent to the amorphous phase formed in the positive active material thereof.

On the matter of claims 10 and 14-16:

The EP'817 discloses lithium battery including the disclosed positive active material (ABSTRACT).

Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102/103. The burden of proof is on applicant *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)). **See MPEP 2112.**

10. Claims 1-4, 10 and 14-16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over the Japanese publication JP 06-275277 (heretofore 'the EP'277').

As to claim 1:

The JP'277 discloses a lithium secondary battery including a positive electrode body with a positive electrode active material containing Li, Co and phosphorous (ABSTRACT). A cobalt oxide including phosphate material (CLAIMS 1-2) forming an amorphous positive electrode material is further disclosed (P0009). Particle sizes (this, powder material) is the positive electrode material is disclosed (P0072, 0086). **Table 4** shows a positive electrode composition comprising at least Li, Co, Ni, P in oxide forms (See **TABLE 4**).

As to claims 2-4:

Since the JP'277 discloses the formation of a Li-containing amorphous materials in the form of oxides, it is noted that the specific particle dispersion and/or phase formation the surface of the particle is inherent to the amorphous phase formed in the positive active material thereof.

As to claims 10 and 14-16:

The JP'277 discloses lithium battery including the disclosed positive active material (ABSTRACT).

Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102/103. The burden of proof is on applicant *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)). *See MPEP 2112*.

11. Claims 1-4, 10 and 14-16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Applicant's Admission of Prior Art (herein called the AAPA) (*See applicant's specification at pages 1-3*).

Regarding claims 1-4:

The AAPA presents different publications teaching positive electrode materials for lithium secondary batteries wherein the positive electrode material has a Li-Ni-Co-O or Li-Ni-Co-Ba-O system composition including specific compounds represented by chemical formulae

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$\text{Li}_{1-x-a}\text{A}_x\text{Ni}_{1-y-b}\text{B}_y\text{O}$ wherein A is one alkaline earth metal element such as Ba and x ranges from 0-0.10 and B is at least one transition metal element other than Ni; and/or $\text{Li}_{1-x-a}\text{A}_x\text{Ni}_{1-y-b}\text{B}_y\text{O}$ forming secondary particles wherein A may be Ba, and x ranges from 0.0 - 0.10 and B is at least one transition metal element (See applicant's specification at pages 1-3).

Examiner's note: applicant further discloses that Ba, among other elements, allows easy formation of the amorphous phase of the oxide (See applicant's specification at page 4, last full paragraph); particularly, such arrangement allows the production of a positive electrode material for a Li-secondary battery having an amorphous phase of an oxide dispersed within a particle and also at a surface of each particle (See applicant's specification at page 6, last full paragraph, item-3); yet more particularly, applicant also discloses that a component for forming an amorphous phase of an oxide composed of one or plural elements selected from the group consisting of Ba, inter alia, is mixed at an extremely small amount of below 0.01 mol into Li-Ni-Co-O system raw material (See applicant's specification at page 10, 1st full paragraph). That being said, since the positive electrode composition of the AAPA includes Ba in the same number of moles or molar range which allows easy formation of an amorphous phase of the oxide, it is contended that the presence of an amorphous phase of the oxide, as well as the specific particle dispersion and/or phase formation the surface of the particle are inherent to the specific composition of the positive active material of the AAPA. In short, element added to the positive electrode composition (i.e. Ba) and number of moles thereof in the AAPA's electrode fully circumscribes applicant's specific composition (in terms of material and molar amounts), therefore, the resulting electrode material of the AAPA also allows easy formation of amorphous

phase thereof, thereby, it also exhibits the same degree of non-crystalline characteristic (amorphousness) as applicant's claimed positive electrode material.

Regarding claims 10 and 14-16:

The AAPA discloses lithium battery including the disclosed positive active material (*See applicant's specification at pages 1-3*).

Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102/103. The burden of proof is on applicant *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)). **See MPEP 2112.**

12. Claims 1-4, 10 and 14-16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kobayashi et al 2002/0055041.

Regarding claim 1:

Kobayashi et al disclose lithium secondary battery comprising at least a positive electrode wherein the electrode has an active material which has at least an amorphous phase. (ABSTRACT/ P0021-0022,0045, 0051, 0068). Particularly, the positive electrode material is composed of at least one or more elements selected from Co, Ni, among others (P0024, 0046, 0051-0052) and oxides thereof (P0051). Disclosed is that transition metal compounds are

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desirable metal-containing compounds that serve as an active material (P0065). Lithium is intercalated therein (P0024, 0075-0076, 0081). At least **EXAMPLES 7 and 15** shows lithium cobalt nickel oxides and respective particle sizes (See EXAMPLES 7 and 15)

Regarding claims 2-4:

Given that Kobayashi et al reveals Li-Co-Ni-oxide materials exhibiting an amorphous phase, it is noted that the specific particle dispersion and/or phase formation the surface of the particle is inherent to the amorphous phase formed in the positive active material thereof.

Regarding claims 10 and 14-16:

Kobayashi et al disclose lithium battery including the disclosed positive active material (ABSTRACT).

Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102/103. The burden of proof is on applicant *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)). See **MPEP 2112**.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Raymond Alejandro
Primary Examiner
Art Unit 1745



RAYMOND ALEJANDRO
PRIMARY EXAMINER